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Earlier studies have compared the success of transfers and natives at graduation, but this investigator felt that a first-term grade point average would reveal more about the stress of adjustment to a new academic environment. He therefore compared the achievement, after one semester, of transfer students from the junior college, the state college, and the private 4-year liberal arts college to the state university, without regard to the achievement of native students. A random sample was drawn of 50 students from each source. If significant differences were found, they would have implications for curriculum planning and instruction at the sending institution. The university Admissions Office supplied the GPA at the end of each subject's first term. (These were not all for the same term, as the students began at different times) Separate computations were made to test the significant differences, if any, in comparisons of (1) private with state college transfers, (2) private with junior college transfers, and (3) state college with junior college transfers. Although results showed that there were no statistically significant differences in success of transfers from the three types of institution at the end of their first semester, they did suggest that the junior college transfers are closer to academic difficulty than the other two groups and that the state college transfer students make a slightly better adjustment to the new academic pressure than the others. (HH)

ACHIEVEMENT OF TRANSFER STUDENTS
FROM TWO YEAR AND FOUR YEAR INSTITUTIONS
TO THE STATE UNIVERSITY

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Studies that compare native students to the junior college transfer in a variety of aspects are numerous. The problems of the transfer student in adjusting to a new institution have been of considerable interest for some time. The literature is replete with these kinds of studies. Research that compares the transfer student from two and four year institutions to the large state university are either not published or not easily available. Therefore, the purpose of this research was to compare the achievement of transfer students from the junior college, the state college and the four year private liberal arts college. Achievement at the end of the first semester at the state university was determined as the point of comparison. It was recognized that other measures of comparison could be considered which have a bearing on the single factor of achievement. However, such variables were not considered.

Young (1964) demonstrated that the type of sending institution significantly affects the academic record of transfer students. In Young's study the "sending colleges" were placed into one of the following categories: junior colleges, liberal arts colleges, women's colleges, teacher training institutions, and public and private universities. The

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results showed that the junior college transfer to Penn State made a significantly poorer academic adjustment than other students. The student from private colleges maintained a consistent level of performance at both institutions.

It was expected that a comparison of the achievement of transfer students at the University would reveal some differences. If differences did appear, these would have implications for curriculum planning, instruction and vocational planning in institutions from which students transfer which could be explicated in further research. It should be made clear that the purpose was not to prove or disprove that the preparation received in any one kind of institution was better or worse than preparation received at another. A consideration of comparative grade point averages was simply to ascertain the differences of achievement, if in fact such differences exist. In other words, the purpose of this study was to investigate another possible dimension for the evaluation of the junior college movement as well as the work of four year institutions measured by the criterion of the University.

There are two factors that effect achievement after transfer (Hood, 1965). The first factor is the difference in ability levels of student bodies. He found that there was little relationship of ability levels and the mean grade point averages of college freshmen in the state of Minnesota. The point was that college freshmen should be advised concerning the competition that he will meet at a given institution.

It is important therefore that transfer students know what their competition is in terms of other transfer students as well as the native students. A second factor effecting achievement, according to Hood, is that of grading practices at both sending and receiving institutions. The implication was that it is important to draw samples of transfer students who come from similar types of institutions for comparison studies.

In another study by Hood (1967) an index of difficulty was established for various colleges. The index was tested by using it to predict differences in grades achieved by students who transferred from one college to another and then comparing such predicted grades with the actual grades. The result was that in Minnesota the grade point averages of junior college transfers to the University decreased $-.43$; the private college transfers decreased $-.17$; and the state college transfer decreased $-.52$. The indication is that junior college transfers to the University of Minnesota do not achieve as well as the private college transfer after transfer, but they achieve slightly better than transfers from state colleges. These results contribute to the formulation of hypotheses for this study at the University of Missouri. Again, at the University of Syracuse Holmes (1961) compared the native student to the transfer from other four year institutions and found a $.14$ drop in grade point average. Hood and Holmes agree that transfers from four year institutions to the large university may expect a slight decrease.

At the University of Missouri a study was made comparing the achievement of junior college transfers to the achievement of transfers from four year institutions (Johnson, 1965). The students that composed this sample were graduated in 1964 and the study was based on the grade point averages at graduation. The result of this study showed no significant differences in the grade point averages of junior college transfers and native students. There was a significant difference in cumulative grade point average comparing the transfers from four year colleges with junior college transfers, but no difference in the last semester's grades. The Johnson study deals with comparisons at graduation, but not with comparisons after the first term experience after transfer. It seems to this investigator that first term grade point average reveals more concerning the adjustment of transfer students to the press of the new academic environment.

The literature shows some consistency in the findings of the studies of achievement of transfer students. Generally, the order of academic adjustment seems to be private, junior and state colleges. This study attempts to answer the following questions: Will the findings based on a sample of the students at the University of Missouri at Columbia be consistent with other studies at different places, at different points in academic careers, and at different times? Are there significant differences between the achievement of transfer students from junior colleges, state colleges and private liberal arts colleges after the first semester at the university?

Do private liberal arts transfers achieve at a higher level than do junior college and state college transfers? Do junior college transfers achieve at a significantly higher level than do state college transfers? The scope of this study does not consider the native student. The focus is on transfers from three distinctly different kinds of institutions and their academic adjustment to a large state university. The state university provides a significant criterion for measuring the academic preparation offered at other colleges in terms of how well transfers from these schools perform.

It was assumed that articulation between the institutions of the state would tend to create some homogeneity in curricula. The junior colleges certainly are interested in designing their transfer programs to minimize transfer difficulties. The same is true of the state colleges with a particular view to transfer into special programs and graduate school. Although the variation of curricula in the private colleges in the state might be expected, the influence of the state University regarding graduate schools is felt. These assumptions gave direction for sampling procedures.

Method

Sampling

A complete list of all transfer students for the Fall Semester of 1967 was provided from the Data Processing Center. From this list transfers from private liberal arts colleges, junior colleges and state colleges were identified and a random sample of each was drawn numbering 100. Each of the

samples of 100 was then reduced to an N of 50 by the matching of ages, type of sending institution and the location of the sending institution. Ages that were included in each sample ranged from 20 to 23 years. All subjects were from Missouri institutions. The exclusion of out-of-state institutions from the samples was considered necessary to work with homogeneous samples. Also confining the samples to Missouri institutions insured similarity within the groups of institutions. The age of subjects was controlled to give some similarity of educational experience and maturity and so produce a uniform level of academic potential.

As a result of the above sampling procedures, the total number for each sample equaled 50 as stated. The grand total N for all samples was 150. For each of the subjects the grade point average at the end of the first semester was obtained from the records in the Office of Admissions. These grades were not obtained in the same semester since not all the students started at the same time. The range of hours attempted in the beginning semester was 9 to 16 or full-time equivalent.

Statistical Procedures

In order to compare the scholastic achievement of the samples from the three different kinds of transfer schools, the mean and standard deviation was computed for each sample. The significant differences of the means was computed by means of a t-Test. Since the data was not correlated, the independent t-test was employed. The F-test was then used to see if there

was a significant difference between the variances of the sets of data. Finally, the Cochran-Cox t-test was computed to test significance when the variances were not equal.

The above procedures were determined to test the significant differences, if any, in the following comparisons: 1) the private liberal arts college transfers compared to the state college transfers, 2) private liberal arts transfers compared to the junior college transfers, and 3) the state college transfers compared to the junior college transfers.

Results

The results of the study indicate that there were no significant differences in the achievement of transfer students from three types of institutions at the end of their first semester. The result is consistent with the study of Johnson (1965), in which it was found that there was no significant difference of grades between these groups at the last semester of their college career. The t-test values are reported in Table 1 where it is noted that there is no significant difference at the .05 level. Therefore, it is concluded that the transfer students studied achieve at about the same level regardless of the kind of institution from which they transferred. The means and standard deviations of the three samples were consistent as Table 1 shows. Mean grade point averages ranged from 2.140 to 2.324 and standard deviations ranged from .679 to .773.

Insert Table 1 about here

In an analysis of variance, the F-Ratio for each of the three comparisons showed no significance as one might expect from the data already presented. Table 2 shows the degrees of freedom, the F-Ratio and the result of the Cochran-Cox t-test for uncorrelated samples and unequal variances. The Cochran-Cox might have been eliminated since the variances showed essential equivalence in the t-tests of independent samples. However, it was anticipated that there might be significant variance and therefore the Cochran-Cox was included in the program. The F-Ratios of 1.045, 1.296 and 1.240 were not significant at the .05 level.

Insert Table 2 about here

The contention that there are no significant differences in the grade point averages attained by transfer students from private liberal arts, state and junior colleges is accepted on the basis of these results.

Discussion

It would appear that the preparation that a student receives in any of three types of institutions within the state of Missouri is adequate to succeed at the University of Missouri at Columbia. Although there appears to be no significant difference in earned grade point averages at the end of the first semester, the evidence suggests that the junior college transfer is closer to academic difficulty than the other two groups. The mean grade point average of the junior college

sample was 2.140 with a standard deviation of .773. In this sampling the state college transfer appears to make a slightly better adjustment to the academic pressure of the university than either junior college or private liberal arts transfers. Statistically, these differences are not significant.

The fact that all the subjects of these samples came from Missouri institutions suggests that these institutions are perhaps influenced by the University in designing their programs. There appears to be considerable congruence in the preparation offered by all the colleges and universities of the state. The reasons for this similarity would provide interesting future research. What are the dynamics within the state that contribute to this uniformity? Based on the findings of this study, there is no need for most students who transfer to the University to feel threatened by the competition of other transfer students.

A longitudinal study with additional controls such as matching scholastic ability of subjects of these same student populations would in the investigator's opinion be valuable. Furthermore, the samples should be taken from transfer students who transfer to the University in the same semester. Peer students and the circumstances of a given semester tend to influence the achievement of students. Further refinements of the study comparing transfer students to other transfers might take into consideration sex differences, differences of transfers from other states compared to Missouri transfers and other aspects of adjustment to the University environment.

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TABLE 1

Tests of Significance

College	N	Mean	Standard Deviation	<u>t</u> -test
Private and State Colleges				
Private	50	2.315	.679	-0.068
State	50	2.324	.694	
Private and Junior Colleges				
Private	50	2.315	.679	1.186
Junior Colleges	50	2.140	.773	
State and Junior Colleges				
State	50	2.324	.694	1.238
Junior Colleges	50	2.140	.773	

T, not significant in any case.

TABLE 2

Analysis of Variance

College	Degrees of Freedom	F-Ratio	Cochran-Cox T-test
Private and State Colleges			
Private	49.00	1.045	-0.068
State	49.00		
Private and Junior Colleges			
Private	49.00	1.296	1.186
Junior Colleges	49.00		
State and Junior Colleges			
State	49.00	1.240	1.238
Junior Colleges	49.00		

F, not significant in any case.